

SEQUENCE LISTING

<110> ARAKI, HIROYUKI

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HAGIHARA, HIROSHI

IGARASHI, KAZUAKI

HAYASHI, YASUHIRO

OZAKI, KATSUYA

<120> HIGHLY PRODUCTIVE ALPHA-AMYLASES

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<140> 09/971,611

<141> 2001-10-09

<150> JP 2000/310605

<151> 2001-10-11

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<170> PatentIn version 3.1

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Lys	Ala	Trp	Asp	Trp	Glu	Val	Asp	Ile	Glu	Asn	Gly	Asn	Tyr	Asp	Tyr	
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Asp	Ile	Ile	Gly	Trp	Thr	Arg	Glu	Gly	Asp	Ser	Ser	His	Pro	Asn	Ser	
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Thr Val Asn Gly Gly Ala Val Ser Val Trp Val Lys Gln	
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Thr Glu Met Val Asn Ala Val Glu Val Asn Arg Ser Asn Arg Asn Gln
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Asp Val Pro Leu His Tyr Asn Leu Tyr Asn Ala Ser Asn Ser Gly Gly
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Ser Asp Ala Gly Ile Thr Ala Ile Trp Ile Pro Pro Ala Tyr Lys Gly	
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Asn Ser Gln Ala Asp Val Gly Tyr Gly Ala Tyr Asp Leu Tyr Asp Leu	
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Val Tyr Gly Asp Val Val Met Asn His Lys Met Gly Ala Asp Phe Thr	
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Glu Ala Val Gln Ala Val Gln Val Asn Pro Thr Asn Arg Trp Gln Asp	
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Ile Ser Gly Ala Tyr Thr Ile Asp Ala Trp Thr Gly Phe Asp Phe Ser	
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Gly Arg Asn Asn Ala Tyr Ser Asp Phe Lys Trp Arg Trp Phe His Phe	
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Ile Pro Asn Asp Asn Ile Ser Ala Lys Lys Asp Met Ile Asp Glu Leu	
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Leu Asp Ala Arg Gln Asn Tyr Ala Tyr Gly Thr Gln His Asp Tyr Phe	
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<213> Bacillus sp. KSM-K38

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Lys Tyr Gly Thr Lys Ala Gln Leu Glu Arg Ala Ile Gly Ser Leu Lys
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Ser Asn Asp Ile Asn Val Tyr Gly Asp Val Val Met Asn His Lys Met
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Gly Ala Asp Phe Thr Glu Ala Val Gln Ala Val Gln Val Asn Pro Thr
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Gly Phe Asp Phe Ser Gly Arg Asn Asn Ala Tyr Ser Asp Phe Lys Trp
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Glu Glu Asn Gly Asn Tyr Asp Tyr Leu Leu Gly Ser Asn Ile Asp Phe
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Ser His Pro Glu Val Gln Asp Glu Leu Lys Asp Trp Gly Ser Trp Phe
205 210 215

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Ala Asp Gln Asp Leu Phe Val Val Gly Glu Tyr Trp Lys Asp Asp Val
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Phe Asp Val Pro Leu Asn Tyr Asn Phe Tyr Arg Ala Ser Gln Gln Gly
 285 290 295

Gly Ser Tyr Asp Met Arg Asn Ile Leu Arg Gly Ser Leu Val Glu Ala
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His Pro Met His Ala Val Thr Phe Val Asp Asn His Asp Thr Gln Pro
 320 325 330

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Tyr Ala Thr Ile Leu Thr Arg Glu Gly Gly Tyr Pro Asn Val Phe Tyr
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 365 370 375

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Gln His Asp Tyr Phe Asp His Trp Asp Val Val Gly Trp Thr Arg Glu
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Gln Thr Trp Thr Asp Leu Thr Gly Asn Asn Gly Ala Ser Val Thr Ile
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34

<210> 13

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<400> 13

acaaggagtc agttggaagg tgccgtgaca tct

33

<210> 14

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 14

cgaaaccaag taatatcagg t

21

<210> 15

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 15

aataccatt ccgattttaa atggcgc

27

<210> 16

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

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<400> 16

gattgggatc agtcatgyca gcttcagaac aaa

33

<210> 17

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<400> 17

aaattcaccg gaaaggtatg ggactgggaa gta

33

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<212> DNA

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<223> Synthetic DNA

<400> 18

tcatccagat gtaatcaatg

20

<210> 19

<211> 33

<212> DNA

<213> Artificial Sequence

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<223> Synthetic DNA

<400> 19

cttagaaatt ggggagaatg gtatacaaat aca

33

<210> 20

<211> 33

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<400> 20

gtgaaacata ttaaattgcag ctatacgaga gat

33

<210> 21

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 21

aacaccacag gtaaagaaat gtttgcagtt gca

33

<210> 22

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<212> DNA

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<400> 22

agaattttgg caaatgacc t

21

<210> 23

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<400> 23

ttgctgcaat ccataactat tttaat

26

<210> 24

<211> 33

<212> DNA

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<400> 24

cttgctgcaa tcgaaagya tttaaataaa aca

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<210> 25

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tctgacaagg cagcaaggtt a

21

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<400> 27

gatccacttc tggaagcacg tcaaacg

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<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 28

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27

<210> 29

<211> 26

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<223> Synthetic DNA

<400> 29

atgtatgtcg ggcgacataa agctgg

26

<210> 30

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<212> DNA

<213> Artificial Sequence

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<400> 30
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25

<210> 31

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27

<210> 32

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ggtttgggtg cagcaataaa t

21

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<222> (16)..(18)

<223> n = a, c, t, or g

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33

<210> 34

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<222> (16)..(18)

<223> n = a, c, t, or g

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33

<210> 35

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<223> n = a, c, t, or g

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33

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<223> n = a, c, t, or g

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33

<210> 37

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<400> 37

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25

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39

<210> 39

<211> 33

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<223> Synthetic DNA

<400> 39

attgatgcgt ggacgagttt cgacttttca ggg

33

<210> 40

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<400> 40

tttcgacttt ccagggcgta a

21

<210> 41

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<213> Artificial Sequence

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<400> 41

ggtgttgact gggatcagca atatcaagaa aatcatatatt tcc

43

<210> 42

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<212> DNA

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<222> (27)..(27)

<223> n = a, c, t, or g

<400> 42
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42

<210> 43

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

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44

<210> 44

<211> 43

<212> DNA

<213> Artificial Sequence

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<400> 44
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43

<210> 45

<211> 21

<212> DNA

<213> Artificial Sequence

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<223> Synthetic DNA

<400> 45

cgataacatt ccagctaaaa a

21

<210> 46

<211> 38

<212> DNA

<213> Artificial Sequence

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<223> Synthetic DNA

<400> 46

gacctggtgg ttccaagaga atgtatgtag gacgtcag

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<210> 47

<211> 42

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42

<210> 48

<211> 39

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<223> Synthetic DNA

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<222> (19)..(21)

<223> n = a, c, t, or g

<400> 48
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39

<210> 49

<211> 33

<212> DNA

<213> Artificial Sequence

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33

<210> 50

<211> 25

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<213> Artificial Sequence

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<400> 50
ggatgaaga gttcggtaat tatga

25

<210> 51

<211> 33

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<400> 51
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33